# BioMap and Living Waters

# Guiding Land Conservation for Biodiversity in Massachusetts

# Core Habitats of Charlemont

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is <u>not</u> intended for use in state regulations.

Produced by:

Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
Executive Office of Environmental Affairs
Commonwealth of Massachusetts

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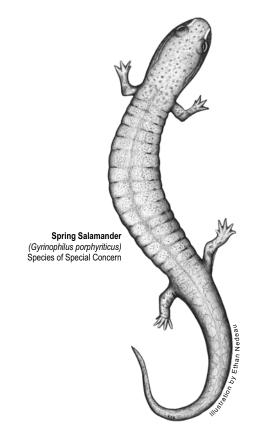
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\* Depending on the location of Core Habitats, your city or town may not have all of these sections.



Funding for this project was made available by the Executive Office of Environmental Affairs, contributions to the Natural Heritage & Endangered Species Fund, and through the State Wildlife Grants Program of the US Fish & Wildlife Service.



Guiding Land Conservation for Biodiversity in Massachusetts

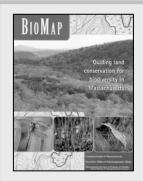
## Introduction

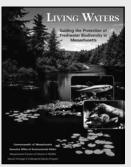
In this report, the Natural Heritage & Endangered Species Program provides you with site-specific biodiversity information for your area. Protecting our biodiversity today will help ensure the full variety of species and natural communities that comprise our native flora and fauna will persist for generatons to come.

The information in this report is the result of two statewide biodiversity conservation planning projects, BioMap and Living Waters. The goal of the BioMap project, completed in 2001, was to identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts. The goal of the Living Waters project, completed in 2003, was to identify and delineate the rivers, streams, lakes, and ponds that are important for freshwater biodiversity in the Commonwealth. These two conservation plans are based on documented observations of rare species, natural communities, and exemplary habitats.

#### What is a Core Habitat?

Both BioMap and Living Waters delineate Core *Habitats* that identify the most critical sites for biodiversity conservation across the state. Core Habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represent a wide diversity of rare species and natural communities (see Table 1), and these areas are also thought to contain virtually all of the other described species in Massachusetts. Statewide, BioMap Core Habitats encompass 1,380,000 acres of uplands and wetlands, and Living Waters identifies 429 Core Habitats in rivers, streams, lakes, and ponds.





Get your copy of the BioMap and Living Waters reports! Contact Natural Heritage at 508-792-7270, Ext. 200 or email natural.heritage@state.ma.us. Posters and detailed technical reports are also available.

## **Core Habitats and Land Conservation**

One of the most effective ways to protect biodiversity for future generations is to protect Core Habitats from adverse human impacts through land conservation. For Living Waters Core Habitats, protection efforts should focus on the *riparian areas*, the areas of land adjacent to water bodies. A naturally vegetated buffer that extends 330 feet (100 meters) from the water's edge helps to maintain cooler water temperature and to maintain the nutrients, energy, and natural flow of water needed by freshwater species.

## In Support of Core Habitats

To further ensure the protection of Core Habitats and Massachusetts' biodiversity in the long-term, the BioMap and Living Waters projects identify two additional areas that help support Core Habitats.

In BioMap, areas shown as Supporting Natural *Landscape* provide buffers around the Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape was



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# BioMap and Living Waters:

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generated using a Geographic Information Systems (GIS) model, and its exact boundaries are less important than the general areas that it identifies. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

In Living Waters, *Critical Supporting Watersheds* highlight the immediate portion of the watershed that sustains, or possibly degrades, each freshwater Core Habitat. These areas were also identified using a GIS model. Critical Supporting Watersheds represent developed and undeveloped lands, and can be quite large. Critical Supporting Watersheds can be helpful in land-use planning, and while they are not shown on these maps, they can be viewed in the Living Waters report or downloaded from <a href="https://www.mass.gov/mgis">www.mass.gov/mgis</a>.

# **Understanding Core Habitat Species, Community, and Habitat Lists**

## What's in the List?

Included in this report is a list of the species, natural communities, and/or aquatic habitats for each Core Habitat in your city or town. The lists are organized by Core Habitat number.

For the larger Core Habitats that span more than one town, the species and community lists refer to the <u>entire</u> Core Habitat, not just the portion that falls within your city or town. For a list of <u>all</u> the state-listed rare species within your city or town's boundary, whether or not they are in Core Habitat, please see the town rare species lists available at <u>www.nhesp.org</u>.

The list of species and communities within a Core Habitat contains <u>only</u> the species and

**Table 1.** The number of rare species and types of natural communities explicitly included in the BioMap and Living Waters conservation plans, relative to the total number of native species statewide.

BioMap		
	Species and Verified Natural Community Types	
Biodiversity Group	Included in BioMap	Total Statewide
Vascular Plants	246	1,538
Birds	21	221 breeding species
Reptiles	11	25
Amphibians	6	21
Mammals	4	85
Moths and Butterflies	52	An estimated 2,500 to 3,000
Damselflies and Dragonflies	25	An estimated 165
Beetles	10	An estimated 2,500 to 4,000
Natural Communities	92	> 105 community types
Living Waters		
	Species	
Biodiversity Group	Included in Living Waters	Total Statewide
Aquatic		
Vascular Plants	23	114
Fishes	11	57
Mussels	7	12
Aquatic Invertebrates	23	An estimated > 2500

natural communities that were explicitly included in a given BioMap or Living Waters Core Habitat. Other rare species or examples of other natural communities may fall within the Core Habitat, but for various reasons are not included in the list. For instance, there are a few rare species that are omitted from the list or summary because of their particular sensitivity to the threat of collection. Likewise, the content of many very small Core Habitats are not described in this report or list, often because they contain a single location of a rare plant



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species. Some Core Habitats were created for suites of common species, such as forest birds, which are particularly threatened by habitat fragmentation. In these cases, the individual common species are not listed.

## What does 'Status' mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations, 321 CMR 10.00. Rare species are categorized as Endangered, Threatened, or of Special Concern according to the following:

- Endangered species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- *Threatened* species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- **Special Concern** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition, the Natural Heritage & Endangered Species Program maintains an unofficial watch list of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated any laws or regulations, but they can help to identify ecologically important areas that are worthy of protection. The status of natural

## **Legal Protection of Biodiversity**

BioMap and Living Waters present a powerful vision of what Massachusetts would look like with full protection of the land that supports most of our biodiversity. To create this vision, some populations of state-listed rare species were deemed more likely to survive over the long-term than others.

Regardless of their potential viability, all sites of state-listed species have full legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.37 and 10.59). The *Massachusetts Natural Heritage Atlas* shows Priority Habitats, which are used for regulation under the Massachusetts Endangered Species Act and Massachusetts Environmental Policy Act (M.G.L. c.30) and Estimated Habitats, which are used for regulation of rare wildlife habitat under the Wetlands Protection Act. For more information on rare species regulations, see the *Massachusetts Natural Heritage Atlas*, available from the Natural Heritage & Endangered Species Program in book and CD formats.

BioMap and Living Waters are conservation planning tools and do not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the combined BioMap and Living Waters vision is fully realized, we must continue to protect all populations of our state-listed species and their habitats through environmental regulation.

communities reflects the documented number and acreages of each community type in the state:

- Critically Imperiled communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- *Imperiled* communities typically have 6-20 sites or few remaining acres in the state.
- *Vulnerable* communities typically have 21-100 sites or limited acreage across the state.
- **Secure** communities typically have over 100 sites or abundant acreage across the state; however excellent examples are identified as Core Habitat to ensure continued protection.



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# Understanding Core Habitat Summaries

Following the BioMap and Living Waters Core Habitat species and community lists, there is a descriptive summary of each Core Habitat that occurs in your city or town. This summary highlights some of the outstanding characteristics of each Core Habitat, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific *fact sheets* at <a href="https://www.nhesp.org">www.nhesp.org</a>.

# **Next Steps**

BioMap and Living Waters were created in part to help cities and towns prioritize their land protection efforts. While there are many reasons to conserve land – drinking water protection, recreation, agriculture, aesthetics, and others – BioMap and Living Waters Core Habitats are especially helpful to municipalities seeking to protect the rare species, natural communities, and overall biodiversity within their boundaries. Please use this report and map along with the rare species and community fact sheets to appreciate and understand the biological treasures in your city or town.

## **Protecting Larger Core Habitats**

Core Habitats vary considerably in size. For example, the average BioMap Core Habitat is 800 acres, but Core Habitats can range from less than 10 acres to greater than 100,000 acres. These larger areas reflect the amount of land needed by some animal species for breeding, feeding, nesting, overwintering, and long-term survival. Protecting areas of this size can be

very challenging, and requires developing partnerships with neighboring towns.

Prioritizing the protection of certain areas within larger Core Habitats can be accomplished through further consultation with Natural Heritage Program biologists, and through additional field research to identify the most important areas of the Core Habitat.

#### **Additional Information**

If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program:

by Phone 508-792-7270, Ext. 200

by Fax: 508-792-7821

by Email: natural.heritage@state.ma.us.

by Mail: North Drive

Westborough, MA 01581

The GIS datalayers of BioMap and Living Waters Core Habitats are available for download from MassGIS: www.mass.gov/mgis

Check out www.nhesp.org for information on:

- Rare species in your town
- Rare species fact sheets
- BioMap and Living Waters projects
- Natural Heritage publications, including:
  - Field guides
  - \* Natural Heritage Atlas, and more!



Massachusetts Division of Fisheries and Wildlife

# **BioMap: Species and Natural Communities**

# Charlemont

## **Core Habitat BM173**

## **Natural Communities**

<u>Common Name</u> <u>Scientific Name</u> <u>Status</u>

Acidic Rocky Summit/Rock Outcrop Secure

Community

High-Energy Riverbank Vulnerable

High-Terrace Floodplain Forest Imperiled

Northern Hardwoods - Hemlock - White Secure

Pine Forest

Rich, Mesic Forest Community Vulnerable

#### **Plants**

Common Name Scientific Name Status

Autumn Coralroot Corallorhiza odontorhiza Special Concern

Bartram's Shadbush Amelanchier bartramiana Threatened

Crooked-Stem Aster Symphotrichum prenanthoides Threatened

Large-Leaved Sandwort Moehringia macrophylla Endangered

Michaux's Sedge Carex michauxiana Endangered

Mountain Alder Alnus viridis ssp crispa Threatened

Nodding Pogonia Triphora trianthophora Endangered

Northern Bog Violet Viola nephrophylla Endangered

Shore Sedge Carex lenticularis Threatened

Thread Rush Juncus filiformis Endangered

Woodland Millet Milium effusum Threatened

## Invertebrates

Common Name Scientific Name Status

Beaver Pond Clubtail Gomphus borealis Special Concern

Early Hairstreak Erora laeta Threatened

Orange Sallow Moth Rhodoecia aurantiago Threatened



Massachusetts Division of Fisheries and Wildlife

# **BioMap: Species and Natural Communities**

# Charlemont

Ski-Tailed Emerald Somatochlora elongata Special Concern

Twelve-Spotted Tiger Beetle Cicindela duodecimguttata Special Concern

Vertebrates

<u>Common Name</u> <u>Scientific Name</u> <u>Status</u>

American Bittern Botaurus Ientiginosus Endangered

Bat Hibernaculum ------

Blackpoll Warbler Dendroica striata Special Concern

Spring Salamander Gyrinophilus porphyriticus Special Concern

**Core Habitat BM191** 

Vertebrates

<u>Common Name</u> <u>Scientific Name</u> <u>Status</u>

Spring Salamander Gyrinophilus porphyriticus Special Concern

**Core Habitat BM300** 

**Plants** 

Common Name Scientific Name Status

Small Site for Rare Plant

Core Habitat BM360

**Plants** 

<u>Common Name</u> <u>Scientific Name</u> <u>Status</u>

Site for Rare Plant

Core Habitat BM368

**Natural Communities** 

<u>Common Name</u> <u>Scientific Name</u> <u>Status</u>

Riverside Seep Imperiled



# **BioMap: Species and Natural Communities**

# Charlemont

**Plants** 

Common Name Scientific Name Status

Small Site for Rare Plant

**Core Habitat BM386** 

**Plants** 

Common Name Scientific Name Status

Small Site for Rare Plant

Core Habitat BM390

**Plants** 

<u>Common Name</u> <u>Scientific Name</u> <u>Status</u>

Small Site for Rare Plant



# **BioMap: Core Habitat Summaries**

# Charlemont

## **Core Habitat BM173**

This Core Habitat contains a large, unfragmented mixed forest of deciduous and evergreen trees. It includes much of the Cold River and its tributaries with steep-sided riverbanks, and encompasses old-growth forest. These high-quality habitats support a wide array of rare insect species, including those of moths, butterflies, tiger beetles, and dragonflies. The area is also important for several rare plant species, and includes one of the state's few Nodding Pogonia populations. The Core Habitat provides an overwintering area for bats, includes significant habitat for Spring Salamanders, as well as wetland habitats for American Bitterns.

#### **Natural Communities**

This Core Habitat contains a large, unfragmented Northern Hardwoods-Hemlock-White Pine forest. Northern Hardwoods-Hemlock-White Pine Forests have a mix of evergreen and deciduous trees, with a closed, full canopy, and sparse shrub and herbaceous layers. They commonly occur on north facing slopes and ravines with moderately acidic soils. This natural community type is commonly found across Massachusetts, although it is too often a victim to fragmentation and development. Large tracts of this forest type are important for the protection of many of Massachusetts' more common species such as bear, deer, moose, and neo-tropical migrant birds. This Core Habitat also contains an excellent High-Energy Riverbank along the entire Cold River. High-Energy Riverbank communities are sparse, open graminoid communities found on cobble and sand deposits along fast-flowing rivers that experience severe flooding and ice scour. Here much of the riverbank is pristine, inaccessible, and surrounded by old-growth forest.

#### **Plants**

This Core Habitat contains several important rare plant populations. Here grows one of the state's few populations of the rare and elusive Nodding Pogonia, which only blooms for one or two days each year. A very large and vigorous population of Woodland Millet, a delicate grass, is growing here as well. Along water bodies, the state's largest occurrences of Shore Sedge are found, as well as a few populations of Mountain Alder.

#### Invertebrates

This Core Habitat includes a large area of undeveloped and relatively unfragmented habitat for a variety of rare insect species, including the Early Hairstreak butterfly, which inhabits Northern Hardwoods Forest with a complement of Beech; the Orange Sallow moth, a species of dry, open woodlands along ridgetops where its larval host False Foxgloves grows; the Twelve-spotted Tiger Beetle, which inhabits riverbanks along the Deerfield River; and rare dragonflies such as the Beaver Pond Clubtail and the Ski-tailed Emerald, which are species of slow-flowing streams, ponds, and lakes. Many of the rare insect species inhabiting this Core Habitat also inhabit a Core Habitat in Hawley (less than 10 km to the southeast), which probably allows for occasional dispersal of insects between these two areas. In addition, this Core Habitat is located less than 5 km from a Core Habitat in the Mount Greylock State Reservation and vicinity, which probably allows for occasional dispersal of Early Hairstreak butterflies between these two areas.



# **BioMap: Core Habitat Summaries**

# Charlemont

## Vertebrates

This Core Habitat contains extensive, connected sections of high-gradient cold brook habitats and headwater seeps that provide significant habitat for Spring Salamanders. Wet meadow and shallow marsh habitat near Tannery Pond and south along Parker Brook provide habitat for American Bitterns and other wetland birds. This Core Habitat also includes upland forest habitat around the entrance to an underground bat hibernaculum (overwintering area). Large portions of this Core Habitat are protected as conservation land within State Forests, but important sections that link larger blocks of conservation land are, at present, unprotected.

## **Core Habitat BM191**

## Vertebrates

This Core Habitat contains large areas of suitable riparian habitat for Spring Salamanders along several miles of coldwater high gradient brooks and associated headwater seeps and springs flowing out of the Catamount Hills in Colrain. Included are sections of Johnson, Cary, Meadow, Holden, and Houghton brooks, as well as portions of several unnamed brooks. Although over half of this Core Habitat is protected within Catamount State Forest, substantial stretches of Spring Salamander habitat in the southwestern, southeastern, and northern parts of the Core Habitat are currently unprotected.

## Core Habitat BM368

## **Natural Communities**

This Core Habitat contains a large acidic Riverside Seep with good species and habitat diversity. A Riverside Seep is a type of mixed herbaceous community that occurs at the base of steep riverbanks where groundwater seeps out of the bottom of the upland slope. This enrichment leads to high species diversity. Here the seep has an excellent forested buffer and is embedded within a High-Energy Riverbank community. Invasive exotic species are present in the surrounding area, but have not yet become established in this good-quality natural community.

# **Living Waters: Species and Habitats**

# Charlemont

**Core Habitat LW119** 

**Fishes** 

Common Name Scientific Name Status

Longnose Sucker Catostomus catostomus Special Concern

**Core Habitat LW126** 

**Fishes** 

<u>Common Name</u> <u>Scientific Name</u> <u>Status</u>

Longnose Sucker Catostomus catostomus Special Concern

**Core Habitat LW301** 

**Plants** 

<u>Common Name</u> <u>Scientific Name</u> <u>Status</u>

Farwell's Water-Milfoil Myriophyllum farwellii Endangered

**Fishes** 

Common Name Scientific Name Status

Longnose Sucker Catostomus catostomus Special Concern



# **Living Waters: Core Habitat Summaries**

# Charlemont

## **Core Habitat LW119**

This section of the Deerfield River and its tributaries support the Longnose Sucker, a fish Species of Special Concern. This species is restricted to the western watersheds of Massachusetts, where it is found in cold, clean, oxygen-rich streams with gravel bottoms. The Longnose Sucker sometimes migrates many miles to reach its spawning grounds. The eggs are released over the gravel bottom, making them susceptible to excess sedimentation, flow alterations, and increases in water temperature. These habitat degradations can be particularly detrimental to the reproductive success of this slow-growing fish that does not reach maturity until 5 to 7 years of age. Protecting the riparian areas adjacent to this Core Habitat will help maintain the cool, clean freshwater habitat of the Longnose Sucker.

## **Core Habitat LW126**

From this section of North River and its tributaries into the Deerfield River, this Core Habitat supports the Longnose Sucker, a fish Species of Special Concern. This species is restricted to the western watersheds of Massachusetts, where it is found in cold, clean, oxygen-rich streams with gravel bottoms. The Longnose Sucker sometimes migrates many miles to reach its spawning grounds. The eggs are released over the gravel bottom, making them susceptible to excess sedimentation, flow alterations, and increases in water temperature. These habitat degradations can be particularly detrimental to the reproductive success of this slow-growing fish that does not reach maturity until 5 to 7 years of age. Protecting the riparian areas adjacent to this Core Habitat will help maintain the cool, clean freshwater habitat of the Longnose Sucker.

## Core Habitat LW301

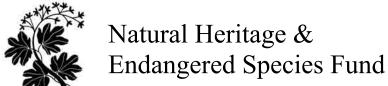
This Core Habitat is centered on the Deerfield River, and extends into the Chickley River and its tributaries, the lower portion of Cold River and its tributaries, and into Pelham Brook and its tributaries, all the way north to Pelham Lake. Pelham Lake is a naturally acidic lake that, along with its outlet, contains one of the state's only known populations of the Endangered Farwell's Water-Milfoil. Native freshwater plants like Farwell's Water-Milfoil are an important component of aquatic ecosystems, providing habitat and nutrition for fishes and invertebrates, and adding oxygen to the water through photosynthesis.

The rest of this Core Habitat supports the Longnose Sucker, a fish Species of Special Concern. This species is restricted to the western watersheds of Massachusetts, where it is found in cold, clean, oxygen-rich streams with gravel bottoms. The Longnose Sucker sometimes migrates many miles to reach its spawning grounds. The eggs are released over the gravel bottom, making them susceptible to excess sedimentation, flow alterations, and increases in water temperature. These habitat degradations can be particularly detrimental to the reproductive success of this slow-growing fish that does not reach maturity until 5 to 7 years of age. Protecting the riparian areas adjacent to this Core Habitat will help maintain the cool, clean freshwater habitat needed by the Longnose Sucker.



# Help Save Endangered Wildlife!

Please contribute on your Massachusetts income tax form or directly to the



To learn more about the Natural Heritage & Endangered Species Program and the Commonwealth's rare species, visit our web site at: <a href="https://www.nhesp.org">www.nhesp.org</a>.